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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,930	10/16/2003	Leonard Stulc	456.02.103US1	4573

7590 11/08/2005  
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EXAMINER
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BEATTY, ROBERT B

ART UNIT	PAPER NUMBER
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2852

DATE MAILED: 11/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/686,930

Applicant(s)

STULC ET AL.

Examiner

Robert Beatty

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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1. On page 1, between lines 2-3 (see preliminary amendment) under the "Related U.S. Application Data" it is believed the provisional application was filed 11/27/2002. Please revise.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 15-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi (JP# 06-118811).

Takahashi (JP# 06-118811) teach an electrophotographic image forming apparatus comprising a first image receiving member 101, an exposing unit 106 for exposing the first receiving member (photosensitive drum) to light so as to form an electrostatic latent image, a developing unit 111 for developing the latent image with toner, an intermediate transfer member 102 for receiving the toner image from the first receiving member (first transfer step at first transfer nip), and a second image receiving member 155 for receiving the toner image from the intermediate transfer member (second transfer step at second transfer nip). See Fig. 1. The intermediate transfer member comprises a non-conductive support layer 2 located on a core layer 1, a thin conductive layer 3 located on the non-conductive support

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layer, and a polymeric electrically resistive (electrically insulating) layer 4 located ontop of the conductive layer. The electrically insulating layer covers the conductive layer except for a margin area (see Figs 2 and 3 or 7 and 8). A bias power source 115 biases the conductive layer of the intermediate transfer member at the first transfer nip and a bias power source 120 biases the conductive layer of the intermediate transfer member at a second transfer nip). As disclosed in paragraph 60 of the translation, the transfer efficiency is greater than 99%. As shown in Fig.4, the thin conductive layer can be divided into segments which are electrically insulated and electrically isolated from each other (see paragraph 44 of translation).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 5,7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (JP# 06-118811) in view of Takahata.

Takahashi taught supra discloses most of what is claimed except the support layer being made of PET, the electrically conductive material being made of Al, the insulating layer being made of polyurethane which has a surface resistance of the

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$10^3 - 10^{13}$  ohm/cm<sup>2</sup>. In addition, the conductive layer being "vapor coated" and the volume resistivity of Aluminum being less than  $10^4$  ohm/square is not taught.

Takahata teach an image forming apparatus comprising a first toner accepting layer (photosensitive drum) 10, a charger 11, an exposing light L, developing devices 20, and an intermediate transfer member (ITM) 36. A latent image will be formed on the photosensitive drum, developed with toner, first transferred to the ITM, and then transferred to a final receiving sheet. The intermediate transfer member comprises a non-conductive flexible film support layer 36c, a conductive layer 36a coated on the support layer, and an electrically resistive polymeric layer 36b as the surface layer. The electrically resistive layer will not coat all the conductive layer so as to leave an edge portion so that an electrical bias can be applied to the conductive layer (col. 5, lines 42-53). The non-conductive support layer 36c may be made of PET, the conductive layer may be made of Aluminum, and the polymeric layer may be made of urethane having a surface resistivity of  $10^8 - 10^{15}$  ohm/cm (col.12, lines 5-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the various layer of the intermediate transfer member from these materials because these are known materials to make an intermediate transfer member which receives power biasing via the marginal edge and one of ordinary skill would have found it obvious to use similar materials so that a good transfer operation could be performed. In addition, the conductive layer being

"vapor coated" is a process step in which patentability cannot rest in an apparatus claim (see MPEP 2113). Finally, Aluminum being extremely conductive such that the volume resistivity is less than  $10^4$  ohm/square is very well known of which the examiner takes Official Notice.

4. Claims 6,13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (JP# 06-118811) in view of Takahata as applied to claims 5,7-12 and further in view of Heeks et al.

Takahashi (JP) and Takahata taught supra discloses most of what is claimed except the support layer being between 0.05 mm - 0.25 mm thick, and the polymeric resistive surface layer being a fluoro-silicone polymer which is resistant to liquid toner carrier. Heeks et al. teach an image forming apparatus which uses liquid developer for developing latent images borne on a photoconductive member, and an intermediate transfer member to which the developed images will be transferred. The intermediate transfer member comprises three layers (see Fig. 6) wherein a non-conductive support layer 40 is made of PET having a thickness between 0.002 - 6 mm. Additionally, a surface layer 41 of fluoro-silicone is applied over an intermediate layer 42 wherein the surface layer has a volume resistivity of  $10^4 - 10^{11}$  ohm-cm. See col. 11, line 14- col.12, line 25; col.13, line 62 - col.14, line 65. It would have been obvious to one of ordinary skill in the art at the time the invention was made make the support layer the claimed thickness because the

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structural stability of the belt can be ensured. It also would have been obvious to one of ordinary skill in the art at the time the invention was made to use a fluoro-silicone outer layer because the belt can be more solvent resistant (from developer liquids, silicone oils, etc.) and thus not swell thus improving the toughness of the belt (col.5, line 64 - col.6, line 17).

5. Applicant's arguments filed 8/22/2005 have been fully considered but they are not persuasive.

The applicant argues that the electrode segments 5 are embedded in the electrically conductive layer 3 and thus are not electrically isolated. The examiner disagrees. Figs 2 and 3 of Takahashi teach that element 1 is an Aluminum base, 2 is an elastic layer, 3 is a circumferentially continuous conductive layer, and 4 is an insulating surface layer (paragraph 43 of translation). A bias power source 115 is applied via a brush electrode 6a to the continuous conductive layer. However, as a separate embodiment, the conductive layer 3 can be divided into a plurality of electrodes 5 which are electrically isolated from each other via the elastic layer 2. This is described in paragraph 44 and Fig.4 of Takahashi. So it is not the electrodes 5 embedded in a continuous conductive layer 3 (which would defeat the purpose of segmenting the electrodes anyway) but rather the conductive layer 3 is itself segmented into the plurality of electrodes 5.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Beatty whose telephone number is (571) 272-2130. The examiner can normally be reached on M-F from 9 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley, can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned



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is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.

A handwritten signature in black ink, appearing to read 'Robert Beatty', with a long horizontal flourish extending to the right.

Robert Beatty  
Primary Examiner  
Art Unit 2852

November 5, 2005